

WHAT IS CLAIMED IS:

1 1. An integrated three phase separator for separation of natural gas, hydrocarbon liquid,
2 and water or brine, which separator comprises:

3 a cylindrical vertical separation unit having a top and an opposed bottom;

4 a cylindrical horizontal separation unit having a pair of opposed ends;

5 a tubular elbow connection having a pair of ends, one said end connected to said
6 bottom of said vertical separation unit and another said end connected at one said end of said
7 horizontal separation unit; and

8 metering plate means within said tubular elbow connection to retain said natural gas
9 in said horizontal unit.

1 2. An integrated three phase separator as set forth in Claim 1 wherein said vertical
2 separation unit, said horizontal separation unit, and said tubular elbow connection each have the
3 same diameter.

1 3. An integrated three phase separator as set forth in Claim 1 wherein said metering plate
2 means includes a flat plate juxtaposed at an angle to an axis of said vertical separation unit and at
3 an angle to an axis of said horizontal unit.

1 4. An integrated three phase separator as set forth in Claim 3 wherein said flat plate is
2 juxtaposed at approximately a 30° angle to said vertical unit.

1 5. An integrated three phase separator as set forth in Claim 1 wherein said metering plate
2 means includes a flat plate extending across a diameter of said tubular elbow connection, and having
3 a truncated base to permit liquid flow therethrough.

1 6. An integrated three phase separator as set forth in Claim 1 including a fluid inlet from
2 a well head into said vertical separation unit.

1 7. An integrated three phase separator as set forth in Claim 6 wherein said fluid inlet is
2 tangential to said vertical unit.

1 8. An integrated three phase separator as set forth in Claim 1 including a natural gas
2 outlet from said top of said vertical separation unit.

1 9. An integrated three phase separator as set forth in Claim 5 including a slot in said
2 metering plate.

1 10. An integrated three phase separator as set forth in Claim 1 including an
2 equalizer/condenser line extending between said horizontal unit and said vertical unit to balance gas
3 pressure in said units.

1 11. An integrated three phase separator as set forth in Claim 1 including a supply gas
2 dryer line extending from said equalizer/condenser line.